

## REMARKS

Applicants have studied the Office Action dated December 17, 2003 and have made amendments to the claims. Applicants respectfully request entry of this amendment under the provisions of 37 C.F.R. § 1.116(a) in that the amendment and remarks below place the application and claims in condition for allowance, or, at least, present the application in better form for appeal. It is submitted that the application, as amended, is in condition for allowance. Claims 1-36 are pending. Claims 1-10, 13-25, and 28-35 have been amended. Reconsideration and further examination of the claims in view of the above amendments and the following remarks are respectfully requested.

As an initial matter, Applicants wish to thank the Examiner for granting a telephonic interview regarding the above identified office action. As discussed in that telephonic interview, Applicants cannot identify any teaching in the cited reference regarding at least the first limitation of the pending independent claims. To make out a *prima facie* case for rejection under 35 U.S.C. § 102(b), the Examiner must show that every limitation of a claim is taught by the reference. Further, the Examiner needs to cite to the specific portion or portions of the cited reference that teach each of the individual limitations of a claim. Applicants cannot properly respond to a rejection containing only general or conclusory allegations that the cited reference anticipates a pending claim. Applicants respectfully request that, when making any rejections, the Examiner specifically explain how the cited reference teaches each individual limitation of the pending claims, with the necessary citations to where such teachings can be found in the cited reference, so that Applicants can fully understand and properly respond to any such rejections.

### Overview of the Present Invention

The present invention is directed to data processing systems, computer readable mediums and methods for performing database operations. The database operations are performed by executing a "query string" that comprises a database query command to be executed by a database search engine. One exemplary embodiment of the present invention uses Structured

Query Language (SQL) as the database query language. In this exemplary embodiment, these query strings, which comprise a database query command to be executed by a database search engine, are assembled by reading database query command elements, including a query language command and command arguments, that are stored in query element tables. These query element tables are able to be, but do not need to be, relational database tables themselves. The query element tables, however, comprise at least one of a query language command and a command argument. See, e.g., specification at page 7, lines 6-13.

#### Claim Amendments

Applicants have amended the independent claims to more clearly describe relevant aspects of the present invention as pertaining to database tables. These amendments are being made for the purposes of clarity and do not raise new issues in the application. Applicants submit that the present amendment places the application in condition for allowance or, at least, presents the application in better form for appeal. Entry of the present amendment is therefore respectfully requested.

In particular, independent claims 1, 16, 31 and 33 have been amended to more clearly define the first limitation, as is exemplified by the amendments to claim 1, which include:

reading at least one of at least one database query language command and at least one database query command argument as a first plurality of elements of a first database search engine query from a first set of one or more query element database tables.

This amendment more clearly describes this particular step of reading to include “reading at least one of at least one database query language command and at least one database query command argument as a first plurality of elements.” This amendment to claim 1 includes more clearly describing the first plurality of elements as “elements of a first database search engine query.” Independent claims 16, 31 and 33 include similar amendments.

Claims, 1, 2, 7, 10, 13, 14, 16, 17, 22, 25, and 28-35 have been amended to more clearly define that the “tables” recited in the relevant limitations of those claims are “database tables.”

Dependent claims 15 and 30 have been amended to provide correct antecedent basis. The term "source data" in these claims has been replaced with the term "results" to be consistent with claims 1 and 16, from which claims 15 and 30 respectively depend. Dependent claims 3, 4, 5, 6, 8, 9, 18, 19, 20, 21, 23 and 24 have been amended to provide proper antecedent basis from the amended claims from which they depend.

#### Overview of the Beavin Reference

The Beavin reference discloses a relational database management system that includes a query processor that permits consideration of alternative user-specified access paths. The Beavin reference teaches accessing and retrieving user data that is stored in relational database tables based upon database query commands that are provided by a user. Once a user provides this query command, the system of Beavin operates to perform the database query specified by the user in that query command. See Beavin at column 5, lines 11-13.

#### Rejection under 35 U.S.C. § 102(b) by Beavin

The Examiner rejected claims 1-36 under 35 U.S.C. § 102(b) as being anticipated by Beavin et al. (U.S. 5,940,819). This rejection is respectfully traversed.

The Beavin reference teaches that the database files are "tables" in accordance with conventional relational database nomenclature. The "tables" of the Beavin reference contain the data that is stored and queried by a relational database management system. Beavin at column 2, lines 60-67. In contrast to the present invention, the Beavin reference does not teach tables that contain database query elements, which are the elements of commands that are supplied to the database management system to perform a desired search. The "tables" of Beavin differ from the "query element database tables" of the claimed invention in that in embodiments of the present invention "at least one of at least one database query language command and at least one database query command argument" are read from the "query element database tables".

The amended independent claims of the present invention include a limitation similar to the following limitation of amended independent claim 1:

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reading at least one of at least one database query language command and at least one database query command argument as a first plurality of elements of a first database search engine query from a first set of one or more query element database tables.

The portion of the Beavin reference cited by the Examiner as teaching this limitation recites as follows:

SQL provides table operations with which users can request database information and form one or more new tables out of the operation results. Data from multiple tables, or views, can be linked to perform complex sets of table operations with a single statement. The table operations are specified in SQL statements called queries. One typical SQL operation in a query is the "SELECT" operation, which retrieves table rows and columns that meet a specified selection parameter. Another operation permitted by SQL is the "JOIN" operation, which concatenates all or part of two or more tables to create a new resulting table.

Beavin, Column 1, lines 2-35 (emphasis added).

Applicants fail to understand how the disclosure of Beavin, which involves: forming one or more new tables out of the operation results, linking data with a single statement and concatenating all or part of two or more tables to create a new resulting table, teaches the recited limitation of "reading at least one of at least one database query language command and at least one database query command argument as a first plurality of elements of a first database search engine query from a first set of one or more query element database tables". Manipulating user data in a database table in order to generate other tables containing that user data is simply not at all analogous to reading database query language commands and database query command arguments from a first set of one or more query element database tables, and then, as is recited in the pending claims, for example by independent claim 1:

assembling a query string from the first plurality of elements, the query string comprising a database query command to be executed by a database search engine; and

executing the first query string to retrieve results from one or more source data tables.

The independent claims of the present invention include the features of: storing the database query commands and command arguments themselves in database tables, extracting

those commands and command arguments themselves from those database tables, assembling a query string from those commands and subsequently executing that query string upon source database tables to extract resulting data of interest. Nowhere does Beavin teach or suggest these recited features of the claimed invention.

The Beavin reference does address determining database “access paths” used by an SQL database management system based upon statistical data that is stored by the database management system. Beavin at column 1, lines 8-10; column 3, lines 26-30; column 10, lines 46-64. However, an “access path” is defined in the art as follows.

In SQL, the path used to locate data specified in SQL statements. An access path can be indexed, sequential, or a combination of both.

*IBM Dictionary of Computing*, Tenth Edition, August, 1993 (emphasis added).

In embodiments of the present invention, the “SQL statement” is what is being stored and read. This is in contrast to the “access path” in Beavin, which is the path used to locate the data in the SQL statement.

Further, the teaching of Beavin does not inherently disclose storing at least one of a database query language command and a database query command argument in one or more query element database tables. Database query commands are generally provided through many means, such as part of command line entered commands, in computer executed scripts and in compiled programs. These common methods of providing database query commands preclude Beavin from inherently disclosing the claimed limitations of the present invention.

Additionally, independent claim 35 is drawn to a data structure that includes “a name of a query element table that includes arguments to be used in composing a database command to process data, the database command comprising a database query command to be executed by a database search engine.” As explained above, Beavin does not teach or suggest a query element table that includes arguments to be used in composing a database command to process data, the database command comprising a database query command to be executed by a database search engine. Further, as explained above, Beavin does not teach storing database query language

commands or database query command arguments in query element database tables. For at least these reasons, Applicants respectfully submit that independent claim 35 distinguishes over the Beavin reference. SQL table operations, which allow linking of multiple tables in a single statement (as cited by the Examiner), do not teach or suggest a “query element table that includes arguments to be used in composing a database command to process data, the database command comprising a database query command to be executed by a database search engine,” as is recited in amended claim 35.

For at least these reasons, Applicants respectfully submit that recited features of the pending independent claims are not taught by the Beavin reference. Thus, the rejection of these claims under 35 U.S.C. 102(b) should be withdrawn.

#### Dependent Claims 2 and 17

As explained above, Beavin does not teach a “query element table,” which is defined to “comprise at least one of at least one query language command and at least one command argument”. Further, Beavin does not teach “reading a name of a second query element table from a first query element database table,” as is recited in amended claims 2 and 17. Beavin also fails to teach “reading a plurality of arguments for a query string from the second query element database table” where the “query string comprises a database query command to be executed by a database search engine”.

#### Dependent Claims 4, 19 and 22

As explained above, Beavin does not teach a “query element table,” which is defined to “comprise at least one of at least one query language command and at least one command argument”. Further, Beavin reference does not teach “reading one or more names corresponding to one or more source data tables from a first query element database table,” as is recited in amended claims 4, 19 and 22.

Dependent Claims 5 and 20

As explained above, Beavin does not teach a “query element table,” which is defined to “comprise at least one of at least one query language command and at least one command argument”. Further, Beavin does not teach “reading a plurality of names of columns of the one or more source data tables from the second query element database table,” as is recited in amended claims 5 and 20.

Dependent Claims 6 and 21

As explained above, Beavin does not teach a “query string comprises a database query command to be executed by a database search engine”. Further, claims 6 and 21 recite “concatenating together a first plurality of elements that include the name of one or more source data tables and the plurality of names of columns.” In contrast, the Beavin reference teaches using the SQL “JOIN” operation which, as noted by the Examiner, “concatenates all or part of two or more tables to create a new resulting table.” Claims 6 and 21 distinguish from the Beavin reference for at least this reason.

Dependent Claims 10, 25 and 32

As explained above, Beavin does not teach a “query element table,” which is defined to “comprise at least one of at least one query language command and at least one command argument”. Further, Beavin does not teach “reading a second plurality of elements of a query from a second set of one or more query element database tables; assembling a database table storage command string from the second plurality of elements and executing the database table storage command string in order to modify a target data table,” as is recited in amended claims 4, 19 and 22.

As explained above, independent claims 1, 16, 32 and 35 distinguish over Beavin. Claims 2-15, claims 17-31, claims 33 and 34, and claim 36 depend from claims 1, 16, 32 and 35, respectively, and thus include all of the limitations thereof. Therefore claims 2-15, 17-31, 33, 34,


and 36 also distinguish over Beavin. Therefore, Applicants respectfully submit that the rejection of claims 1-36 under 35 U.S.C. 102(b) should be withdrawn.

In view of the foregoing, it is respectfully submitted that the application and the claims are in condition for allowance. Reexamination and reconsideration of the application, as amended, are requested.

If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is invited to call the undersigned attorney at (561) 989-9811 should the Examiner believe a telephone interview would advance the prosecution of the application.

Respectfully submitted,

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